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Teachers' Link to Electronic Resources in the Library Media Center

A Case Study of Awareness, Knowledge, and Influence

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Over the past decade, high school library media centers have enhanced their print collections with various online electronic resources, including online encyclopedias, subscription databases, Web pages, and search engine links. However, conventional wisdom among twelve- to eighteen-year-olds, 80 percent of whom are online, is that the free Internet is their reference library.¹ Some school librarians suggest that teachers' confusion between subscription databases and Web sites may contribute to student misunderstanding.²

The focus of this study was to explore the influence teachers have on the use of electronic resources in the high school library media center. Specifically, the research team wanted to analyze the relationship between teachers' own computer literacy and their knowledge about and use of the school library's electronic resources, and student understanding and use of these resources.

Our survey took place at Carmel High School (CHS), located in an affluent suburban area north of Indianapolis. CHS has a total enrollment of 3,500 students in grades nine through twelve. In 2001/2002, 88 percent of their tenth graders passed state achievement exams, and 90 percent of the graduates entered college. CHS library allocates approximately \$20,000 for online resources and is staffed by three full-time library media specialists and three full-time support staff members.

Sixty-seven percent (164 of the 250 teachers) completed our survey. Although the study's

primary research questions focused on electronic resources, teachers were asked general library use questions as well. On average, teachers said they required their students to use the library media center one to three times during the last school year. English and social studies teachers required their students to use it more often than this, while most math teachers said they never required use of the library media center. Most commonly, teachers bring their classes to the library media center for information-seeking, computer access, or research papers. About 36 percent identified scheduling restrictions as a barrier to additional use.

The faculty was asked to assess the quality of the resources in the CHS library media center. More than 90 percent said the resources support their assignments and curriculum and are current and relevant, yet 29 percent described themselves as unaware of the media center's resources.

We looked in greater detail at responses related to the study's four research questions.

Research Question 1

What are awareness levels and opinions of electronic resources in the library media center?

When given a list of electronic databases from ProQuest, Gale, and other services, most of the teachers indicated they were not familiar with them. The percentage of teachers unfamiliar with a specific resource ranged from 54 to 83 per-

cent, depending upon the database. Resources that received a majority of responses in the "familiar" or "very familiar" level were the CHS Web page (99 percent), the Carmel Clay Schools Web page (99 percent), CHS's library catalog (88 percent), and the Internet (99 percent).

Assessment of the value of an electronic resource was related to the teacher's familiarity with it. Most teachers answered that they never used subscription databases; however, more than 80 percent ranked the library media center's catalog and the school's Web page as "good" or "excellent." When asked to rank the value of Internet access, more than 36 percent ranked it as "good" and more than 56 percent described it as "excellent."

In assessment of the value of the Internet for student learning, a high percentage of those responding (with no differences among departments) rated it in "good" or "excellent" for three different categories: 71 percent for homework assignments, 85 percent for "teachable moment" information, and 91 percent for special reports or projects.

Table 1 presents how teachers compared the value of electronic databases and the Internet as information resources. Teachers responded "No Difference" or "Don't Know" for most of the questions; however, they did acknowledge that electronic databases provided more reliable and focused information. Among teachers who indicated a preference between electronic databases and the Internet, most indicated the Internet was faster, more current, easier to use, and offered a greater scope of information.

No matter how teachers ranked the value of specific electronic databases, they always rated databases as more reliable than the Internet. Teachers who were least familiar with specific databases were more likely to rate the Internet as easier to use. When asked to comment on use of the Internet for classroom assignments, more than one hundred CHS faculty members used favorable terms such as "excellent," "useful," and "valuable."

Research Question 2

Do teachers require their students to use electronic resources for education purposes?

Teachers were asked how often they direct their students to use specific library print and non-print resources (table 2). About 18 percent often direct students to use electronic databases, while 27 percent sometimes and almost 42 percent never direct their students to these sources. In contrast, 78 percent of the faculty either sometimes or often refer their students to the Internet. In more than 30 percent of the classrooms, students were never asked to consult print reference materials, multimedia resources, or electronic databases.

As shown in table 3, about 69 percent of teachers say they never tell students not to use the Internet as their only resource. A similar percentage says they never tell students not to use the Internet. More than half of teachers said they never tell students to consult print before electronic resources or to use electronic databases in advance of using the Internet.

Beyond what is shown in table 3, there were some variations between faculty departments. Forty-five percent of the mathematics department said they never allow students to choose their own resources. Fifty-six percent of

the English department said they always tell students to consult electronic databases before the Internet, and no one said never. The English department (72 percent) and social studies department (53 percent) either always or sometimes tell students to use print resources before electronic resources. The English department also sometimes tells students not to use the Internet 84 percent of the time. In the art department, 43 percent tell students to use the Internet only.

Research Question 3

Is there a relationship between teachers' own computer use (for any task, but particularly for information searching), and their instructions for student use of electronic resources in the library media center?

Generally teachers rated their computer and Internet skills higher than their proficiency with electronic databases. Using ratings of "Beginner," "Basic," "Proficient," and "Expert," more than half the respondents rated themselves

Table 1
Comparison of Electronic Databases and Internet as Information Resources by Percent of Faculty

	Electronic Databases	Internet	No Difference	Don't Know
Greater scope of information	20.1	34.8	4.3	40.9
More current information	12.9	34.4	7.4	45.4
Ease of use	17.8	31.9	12.3	38.0
Faster response	16.0	26.4	6.7	50.9
More reliable information	53.0	4.3	4.3	38.4
More focused information	52.4	5.5	3.7	38.4

Table 2
Percent of Faculty Directing Students to Specific Resources

	Never	Sometimes	Often	Always
Internet	13.0	39.8	37.9	9.3
Media specialist	22.6	37.7	22.0	17.6
Library catalog	29.6	39.0	20.1	11.3
Print reference materials	31.9	36.3	24.4	7.5
Electronic databases	41.8	27.2	18.4	12.7
Multimedia resources	33.5	37.9	21.1	7.5

Table 3
Directions to Students for Using Electronic Resources by Percent of Faculty

	Never	Sometimes	Often	Always
Tell them to choose their own resources	12.3	40.1	25.3	22.2
Tell them to consult the media specialist	18.8	41.3	25.0	15.0
Tell them to use electronic databases before the Internet	56.8	22.8	9.9	10.5
Tell them to use print resources before electronic resources	60.9	29.8	6.8	2.5
Tell them to use the Internet only	68.5	27.2	3.7	0.6
Tell them not to use the Internet	69.6	29.2	1.2	0.0

as “Proficient” in overall computer abilities (50 percent) and Internet use skills (52 percent); however, they rated their skills in using electronic resources for information searching much lower: “Beginner,” 24 percent; “Basic,” 40 percent; “Proficient,” 30 percent; and “Expert,” 6 percent.

The higher teachers rated their computer experience, the more familiar they were with specific electronic databases and the more likely they were to direct students to use them. Almost 80 percent of those who described themselves as novice users of electronic resources did not direct their students to use library databases. In contrast, teachers who saw themselves as expert database users always directed their students to these services. Also, teachers were less likely to recommend that students use the Internet if they ranked their own expertise in using electronic databases higher. While age affected these responses (younger faculty ranked their electronic skills higher and were more likely to tell students to use electronic databases before the Internet), having an advanced degree did not.

Research Question 4

Should media centers develop a tool to bridge any gaps between teachers’ knowledge and opinions of electronic resources and how these resources are best used by students?

As shown in table 4, teachers preferred one-on-one instruction and class or group instruction by media professionals to online tutorials and audiovisual training materials. Interesting connections between the preferred method of instruction and the perceived support of curriculum emerged. Those who were most aware of resources were more likely to rank collaborative teaching highly, while those who were unaware of resources were more likely to rate such collaboration as average. Further, most of those teachers who preferred e-mail communication about media resources also felt that electronic resources did not support their curriculum. Of the sixteen teachers who ranked instructional handouts as “Excellent,” all were from the group who disagreed that resources do support their curriculum.

Responding to an open-ended question regarding suggestions for resources that could be added to the media center to support teaching, about twenty teachers specified the need for more media specialists. Many cited the need for more audiovisual materials and equipment to

than they do about electronic databases. While they consider the Internet to be faster, more current, easier to use, and greater in scope of information than electronic databases, they consider information from electronic databases to be more reliable and focused.

. . . teachers who saw themselves as expert database users always directed their students to these services. . . . teachers were less likely to recommend that students use the Internet if they ranked their own expertise in using electronic databases higher.

support teaching, and four teachers requested more math resources. One teacher commented on the need for more professional instruction on media resources by saying, “I suspect that if I had knowledge of some of the database sources referred to in this survey that I could use resources that are already available to me. We obviously need some in-service that will enable us to make appropriate use of the vast resources and skills of our media center.”

Recommendations

Overall, CHS teachers are satisfied with the library media center’s resources, and they believe these resources support their curriculum. The majority bring their students to the media center one to three times a year, most often for information searching, computer access, and research papers. Most CHS teachers say they are aware of the library media center resources, and they have some influence on how students use them.

Based on the survey results, we conclude that CHS teachers encourage student use of the Internet in the library media center. The CHS teachers say they know more about the Internet

Age and years of teaching make some difference in how teachers direct their students to use electronic resources. The survey found that the younger and less-experienced CHS teachers give their students more directions on how and when to use electronic databases versus the Internet. Also, those teachers who rated their electronic database skills the highest are more likely to direct their students to use databases before the Internet.

A difference was noted in the response given by English teachers as it pertains to their recommended use of online database resources versus the Internet. This may be due to the strong collaboration of the school library media specialists with the faculty of that department. This collaboration results in increased training for English teachers and perhaps contributes to their greater awareness and use of the online database resources.

Teachers favor personal methods, such as one-on-one and class or group instruction, over more impersonal techniques, such as online tutorials and e-mail communication.

Based on the research results, library media specialists need to develop instructional methods

Table 4
Value of Method for Learning about Media Resources by Percent of Faculty

	Poor	Average	Good	Excellent
Workshops/in-service	4.4	27.0	50.9	17.6
E-mail Communication	6.1	28.8	47.9	17.2
Instructional Handouts	5.6	32.9	50.9	10.6
Online Tutorials	8.3	48.7	35.3	7.7
Class/group instruction by media professionals	3.1	19.5	50.3	27.0
One-on-one instruction	1.3	11.3	40.9	46.5
Audiovisual training materials	6.3	42.4	44.3	7.0
Collaborative teaching (media specialist and teacher)	1.3	21.9	46.5	30.3

to educate the teachers on how and when to direct their students to use electronic resources. The instruction should include how the resources differ, the scope and currency of information provided by the resources, the credibility and reliability of each source, and how to win the battle between speed and quality of response.

When evaluating these training methods, each library media center should consider the size of its professional staff in relation to the total number of teachers and students it serves. Training programs that work well at schools of one size may not be appropriate for schools with a smaller or larger student and teacher population. For example, CHS currently has about 4,000 students, 270 teachers, and 4 library media specialists. These figures average to one library media specialist for every sixty-eight teachers and one for every thousand students, and may indicate a need for training programs that will be successful with larger groups. Further research would be needed to identify the most effective training methods based on school size.

Library media specialists need to evaluate their online database holdings for cost effectiveness and to ensure these resources support the curriculum and teacher needs. The database evaluation should also provide input toward understanding faculty training requirements. Database vendors play an important role in the evaluation process, as many now provide monthly usage statistics. By tracking this data, library media specialists can observe database usage patterns and changes in curriculum as well as gain insight into areas of curriculum mapping. In times of budget constraints, this data can help to prioritize purchases of electronic resources.

The library media specialist team at CHS has used several methods to educate the teachers on electronic resources, and many other techniques are being developed. Based on these past and current efforts, some recommendations for training teachers include:

- Provide open house and instructional tours to new (entry-level to five years) staff members.
- Provide professional development sessions once a month focusing on different resources. At CHS, these events take place each period in the block schedule and last twenty to thirty minutes. Teachers come to the library media center at the beginning of their preparation periods; the short, focused impact sessions allow them time to complete other classroom work in that same period.
- Host departmental meetings in the library media center to highlight resources, display curriculum connections, and demonstrate online resources to a focused group.
- Acquire free trials of selected databases, targeted to specific departments or curriculum needs, for demonstration to teachers over a thirty-day period. Free trials are an excellent way to pique teachers' interest and involve them in the process of evaluation and instruction.
- Develop individual, online tutorials for teachers. CHS's large size tends to make teachers very protective of their time away from their classrooms. An online tutorial provides instruction, guidance, and curriculum assistance for teachers to use in their own timeframe and comfort level.

- Revisit individual school and state curriculum standards to ensure a targeted approach in purchase of online databases. CHS's move toward curriculum mapping will help the library media center see the big picture for future acquisitions. ●

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1. Douglas Levin and Sousan Arafeh, "The Digital Disconnect: The Widening Gap Between Internet-Savvy Students and Their Schools," *Pew Internet Project*, Aug. 14, 2002, <www.pewinternet.org/reports/toc.asp?Report=67>. Accessed 3 Oct. 2002.
2. Katherine Pennavaria, "Down with Google! Better Source Selection for Students," *Kentucky Libraries* 67, no. 2 (spring 2003): 11-13.

Web Resources

Carmel High School Library Media Center, <http://carmelhighschool.net/departments/media/index.shtml>

Southport High School Library Media Center, <http://shs.msdp.k12.in.us/depts/imc/imc.html>

ClearLearning's TestPilot Software, www.clearlearning.com

Survey Questions and Teacher Responses to Open-Ended Questions, <http://carmelhighschool.net/Highsmith.htm>

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